

$G: p \parallel q$
 $P: \angle 1 \cong \angle 2$
 $S.$

S.	R
① $p \parallel q$	① Given
② $\angle 1 \cong \angle 3$	② Corr. \angle s post.
③ $\angle 3 \cong \angle 2$	③ Vert. \angle s \cong
④ $\angle 1 \cong \angle 2$	④ transitive

3.3 Prove Lines are Parallel

Postulate 16

Corresponding Angle Converse

If corresponding \angle s are \cong , then the lines are \parallel .

Theorem 3.4

Alternate Interior Angle Converse

If alternate interior \angle s are \cong , then the lines are \parallel .

Theorem 3.5

Alternate Exterior Angle Converse

If alternate exterior \angle s are \cong , then the lines are \parallel .

Theorem 3.6

Consecutive Interior Angle Converse

If same-side interior \angle s are supplementary, then the lines are \parallel .

Theorem 3.7--Transitive Property of

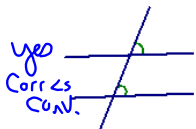
Parallel lines--If 2 lines are parallel to the same line, then they are parallel to each other

$G: m \parallel n$
 $n \parallel p$
 $Concl: m \parallel p$

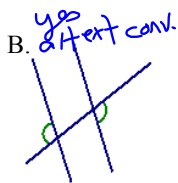
Is there enough information to prove the lines parallel?

If yes, why?

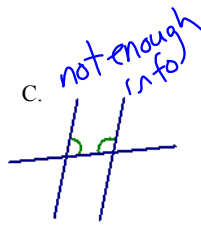
A.



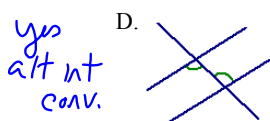
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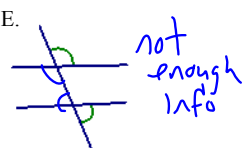
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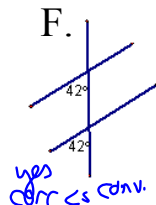
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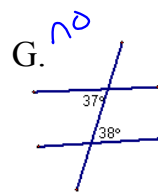
E.



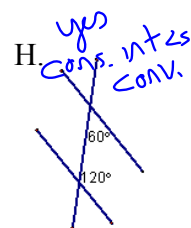
F.



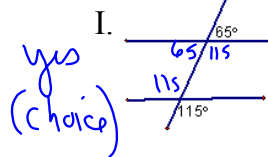
G.



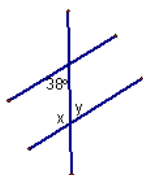
H.



I.

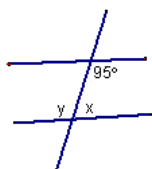


Find the value for x and y , so that the lines are parallel.



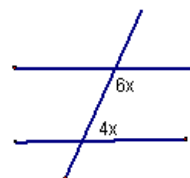
$$y = 38^\circ$$

$$x = 142^\circ$$



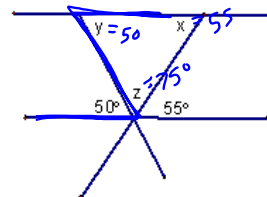
$$y = 95^\circ$$

$$x = 85^\circ$$



$$6x + 4x = 180$$

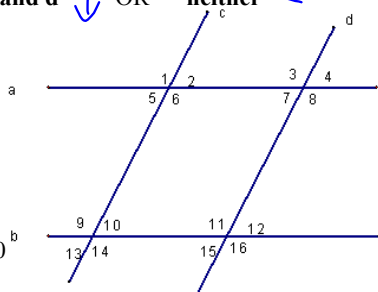
$$x = 18$$



Which lines are parallel based on the given information?

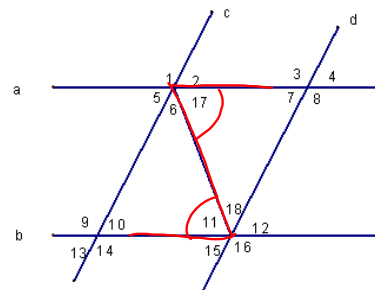
a and b \uparrow OR **c and d** \downarrow OR **neither** \leftarrow

1. $\angle 1 \cong \angle 9$
2. $\angle 13 \cong \angle 15$
3. $\angle 7 \cong \angle 12$
4. $\angle 3 \cong \angle 16$
5. $\angle 1 \cong \angle 16$
6. $m\angle 8 + m\angle 12 = 180$
7. $m\angle 2 + m\angle 3 = 180$
8. $m\angle 10 + m\angle 15 = 180$
9. $\angle 13 \cong \angle 12$
10. $\angle 1 \cong \angle 6$

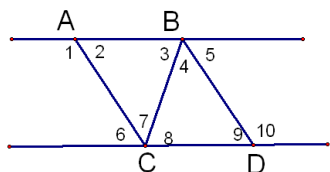


11. $\angle 11 \cong \angle 17$

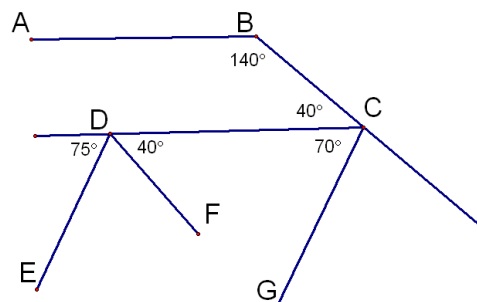
12. $\angle 18 \cong \angle 6$

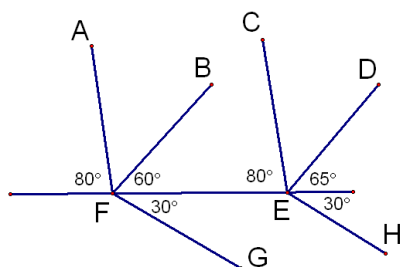


$\overline{AB} \parallel \overline{CD}$ \uparrow
Which lines,
if any, are
parallel?
 $\overline{AC} \parallel \overline{BD}$ \downarrow



1. $\angle 2 \cong \angle 6$
2. $\angle 2 \cong \angle 5$
3. $m\angle 2 + m\angle ABD = 180$
4. $\angle 3 \cong \angle 8$
5. $\angle 4 \cong \angle 7$
6. $\angle 10 \cong \angle 6$





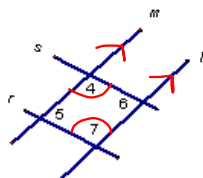
S.	R.
① $\angle 1 \cong \angle 2$	① Given
② $m \parallel n$	② Corr \angle s Conv.
③ $\angle 4 \cong \angle 3$	③ Corr \angle s post.

Ex 1

Given: $\angle 1 \cong \angle 2$
Prove: $\angle 4 \cong \angle 3$

R.	S.
① ~	① Given

Ex 2:



Given: $\angle 4 \cong \angle 7$
 $m \parallel s$
 Prove: $r \parallel s$

HW
 p165-168
 10-15, 17, 19-21, 26-28, 34